REMARKS

In the Office Action, claims 1 - 18 were noted as pending in the application, and all claims were rejected. By this amendment, claims 7, 13, and 15 - 18 have been canceled and claims 1, 8, 11, and 14 have been amended. Thus, claims 1 – 6, 8 – 12, and 14 are pending in the application. The rejections of the Office Action are traversed below.

Rejection of Claims 1 - 18 under 35 USC §102

In item 2, on pages 2 - 3 of the Office Action, claims 1 - 18 were rejected under 35 USC §102 as being anticipated by U.S. Patent 5,963,870 to Chheda et al. This rejection is respectfully traversed.

The Claimed Invention

Exemplary embodiments of the Applicant's invention are directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a quality estimator. The particular estimation algorithm utilized for the quality estimator is a function of the relative measured velocity of the mobile transceiver. In this manner, the transmit power level is controlled to be high enough to avoid data loss but not so high as to cause interference in excess of a threshold.

The Chheda et al. Patent

Chheda et al. discloses a method for switching between IS-95 forward power control and fast forward power control in a mobile radio as means for controlling transmission power (Chheda et al. at abstract; Col. 1, lines 53 – 59; Col. 12, lines 14 - 34). At higher mobile radio speeds, Chheda et al. utilizes the IS-95 forward power control to more quickly adjust transmission power levels (Col. 12, lines 22 - 32). At lower mobile radio speeds, the slower fast forward link power control process is used to control transmission power levels (Col. 12, lines 32 - 34).

The Claimed Invention is Patentably Distinguishable Over Chheda et al.

The Applicant's claimed invention is directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a signal quality estimator. The particular estimation algorithm utilized for the quality estimator is a function of the measured velocity of the mobile transceiver relative to the base station. In particular, and citing to the relevant parts of independent claim 1, the radio transceiver includes a quality estimator using an estimation algorithm having a response speed, wherein the response speed of the estimation algorithm is controlled in response to the measure of velocity of the transceiver. For example, as noted in the specification at page 4, lines 9 – 17, a fast SIR estimation algorithm can be utilized by the transceiver when the mobile station is moving at a low velocity so as to follow fast fading of the transmitted radio signal. Correspondingly, a slow SIR estimation algorithm can by utilized when the mobile station is moving at a high velocity.

The Office Action asserts that Chheda et al. discloses such features and cites to Fig. 1; Abstract; Col. 3, line 46 – Col. 4, line 17; and Col. 4, lines 33 – 47 and 52 - 67 as support for such features. The Applicant respectfully disagrees, noting that nothing in the cited portions of Chheda et al. discloses that a quality estimation algorithm is changed or controlled based on the velocity of the transceiver. Further, Chheda et al. is completely silent regarding the use of any quality estimation algorithms having a response speed. Instead, the cited portions of Chheda et al. disclose using variable signal quality measurements for triggering changes in power transmission levels based on changes in the speed of the mobile radio (Col. 3, lines 52 – 60). The variable signal quality measurements are higher for low speed mobile radio movement and lower for high speed operation (Col. 3, lines 52 – 60).

The power control process of Chheda et al. also accommodates variable mobile radio speeds by switching between a IS-95 power control process (for high-speed mobile radio movement) and a fast forward power control process (for lower-speed mobile radio movement) (Col. 12, lines 14 - 34). By adjusting the speed by which the power control process can change power transmission levels, Chheda et al. can respond to changes in signal fading rates caused by the changes in the speed of the mobile radio (Col. 12, lines 18 - 34).

However, Chheda et al. is completely silent regarding the claimed feature of controlling the response speed of the estimation algorithm of the quality estimator based on the velocity of the transceiver.

It is respectfully submitted that Chheda et al. fails to disclose each of the features recited in claim 1; and, therefore, Chheda et al. cannot reasonably be said to anticipate Applicant's claimed invention. Accordingly, claim 1 is believed to be patentably distinguishable over the Chheda et al. document, and it is respectfully requested that the rejection of claim 1 be withdrawn.

Claims 2 – 6 and 8 - 10 depend from claim 1 and include all the features of claim 1 plus additional features which are not taught or suggested by the Chheda et al. document. Therefore, for at least this reason and the reasons set forth above with respect to claim 1, it is submitted that claims 2 – 6 and 8 - 10 patentably distinguish over the Chheda et al. document.

Claim 11 is a method claim for estimating quality of received radio signals in a transceiver that also recites the feature of a quality estimation algorithm having a response speed, and the response speed of the estimation algorithm being controlled in response to the measure of relative velocity of the transceiver. For the reasons discussed above regarding claim 1, it is respectfully submitted that Chheda et al. also fails to disclose each of the features recited in claim 11; and, accordingly, Chheda et al. cannot reasonably be said to anticipate Applicant's claimed invention. It is therefore respectfully requested that the rejection of claim 11 be withdrawn.

Claims 12 and 14 depend from claim 11 and include all the features of claim 11 plus additional features which are not taught or suggested by the Chheda et al. patent. For example, claim 14 specifies that the response speed of the estimation algorithm is controlled such that a first higher response speed is used in the event of a low measure of velocity of the transceiver, and a second lower response speed is used in the event of a high measure of velocity of the transceiver, which is neither taught nor suggested by Chheda et al. Therefore, for at least this reason and the reasons set forth above with respect to claim 11, it is submitted that claims 12 and 14 patentably distinguish over the Chheda et al. document.

Rejection of Claims 1 - 18 under 35 USC §102

In item 3, on pages 3 - 5of the Office Action, claims 1 - 18 were rejected under 35 USC §102 as being anticipated by published European Patent Application No. EP0847146 to Endo et al. This rejection is respectfully traversed.

The Endo et al. Patent Application

Endo et al. discloses a power control apparatus for controlling the radio signal transmission power based on the radio communication qualities between a mobile terminal and a base station (Endo et al. at Abstract; Col. 1, lines 3 – 11). A power control apparatus at the transmitting device adjusts the transmission power up or down based on error rate values received from the receiving device (Col. 13, lines 26 – 41). The power control apparatus can also adjust the transmission power in one channel direction between the mobile terminal and the base station taking communication quality of the other channel direction into account and thereby reducing interference with other communication (Abstract; Col. 16, lines 17 - 36). The power control apparatus further has dual error rate threshold values, based on whether the mobile terminal is determined to be in a high-speed moving mode or a normal-speed moving mode (Col. 21, lines 50 – 55).

The Claimed Invention is Patentably Distinguishable Over Endo et al.

The Applicant's claimed invention is directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a signal quality estimator. The particular estimation algorithm utilized for the quality estimator is a function of the measured velocity of the mobile transceiver relative to the base station. In particular, and citing to the relevant parts of independent claim 1, the radio transceiver includes a quality estimator using an estimation algorithm having a response speed, wherein the response speed of the estimation algorithm is controlled in response to the measure of velocity of the transceiver. For example, as noted in the specification at page 4, lines 9 – 17, a fast SIR estimation algorithm can be utilized by the transceiver when the mobile station is moving at a low velocity so as to follow fast fading of the transmitted radio signal.

Correspondingly, a slow SIR estimation algorithm can by utilized when the mobile station is moving at a high velocity.

The Office Action asserts that Endo et al. discloses such features and cites to Col. 13, line 45 – Col. 14, line 53 and Col. 21, line 19 – Col. 22, line 33 as support for such features. The Applicant respectfully disagrees, noting that nothing in the cited portions of Endo et al. discloses that a quality estimation algorithm is changed or controlled based on the velocity of the transceiver. In fact, Endo et al. is completely silent regarding the use of multiple estimation algorithms. Instead, the power control apparatus of Endo et al. accommodates high-speed and normal-speed terminal movement with two different, predetermined threshold error values for triggering a power transmission change based on the velocity of the mobile terminal (Col. 21, line 42 – Col. 22, line 20). By setting the threshold for signal quality degradation to a relatively high value for a high-speed moving terminal, the transmission power will not needlessly be adjusted by Endo et al. as the mobile terminal quickly and temporarily moves through an area causing signal degradation (Col. 22, lines 2 – 20). Therefore, as noted at Col. 21, lines 42 – 55 and Col. 22, lines 29 – 33, Endo et al. can apply separate judgment means to a normal-speed terminal moving mode and to a high-speed terminal moving mode, with the separate judgment means being two different error threshold values for triggering a power transmission change. In contrast, the present application employs different estimation algorithms, such as slow and fast SIR estimation algorithms, in the quality estimator, based on the measure of velocity of the transceiver.

It is respectfully submitted that Edno et al. fails to disclose each of the features recited in claim 1; and, therefore, Endo et al. cannot reasonably be said to anticipate Applicant's claimed invention. Accordingly, claim 1 is believed to be patentably distinguishable over the Endo et al. document, and it is respectfully requested that the rejection of claim 1 be withdrawn.

Claims 2 – 6 and 8 - 10 depend from claim 1 and include all the features of claim 1 plus additional features which are not taught or suggested by the Endo et al. patent. Therefore, for at least this reason and the reasons set forth above with respect to claim 1, it is submitted that claims 2 – 6 and 8 - 10 patentably distinguish over the Endo et al. document.

Claim 11 is a method claim for estimating quality of received radio signals in a transceiver that also recites the feature of a quality estimation algorithm having a response speed, and the response speed of the estimation algorithm being controlled in response to the measure of relative velocity of the transceiver. For the reasons discussed above regarding claim 1, it is respectfully submitted that Endo et al. also fails to disclose each of the features recited in claim 11; and, accordingly, Endo et al. cannot reasonably be said to anticipate Applicant's claimed invention. It is therefore respectfully requested that the rejection of claim 11 be withdrawn.

Claims 12 and 14 depend from claim 11 and include all the features of claim 11 plus additional features which are not taught or suggested by the Endo et al. patent. For example, claim 14 specifies that the response speed of the estimation algorithm is controlled such that a first higher response speed is used in the event of a low measure of velocity of the transceiver, and a second lower response speed is used in the event of a high measure of velocity of the transceiver, which is neither taught nor suggested by Endo et al. Therefore, for at least this reason and the reasons set forth above with respect to claim 11, it is submitted that claims 12 and 14 patentably distinguish over the Endo et al. document.

Summary

It is submitted that none of the documents, either taken alone or in combination, teach the claimed invention. Thus, claims 1 – 6, 8 – 12, and 14 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited. If any fees are required in connection with this Amendment, please charge the same to our Deposit Account No. 02-4800.

Respectfully submitted,

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